2005-12-08-Debuncher Component Centering

1. Complete a Debuncher admittance measurement to document starting conditions.
2. Running Wave using the Java Paint the Aperture Application.   The purpose of this step is to find where we are losing beam so that we can make bumps in that location.
   - Start the Java Application from the Java Index
   - Task Manager -> Configure
   - Load last configuration
   - Choose file configuration
   - Unclick Modify timers
   - Cosine Activator
     - D:V401
     - Delta = 10, so knob D:V401 from -19.95 to -9.5
     - P60 DEB50 <37>

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┌─                    Linux PA P60 POWER SUPPLY PARAM<NoSets>              ┐
P60   CORR. DEVICES   KEG NOV04 ▮    SET    D/A   A/D  Com-U ◆PTools◆
-<FTP>+ *SA◆ X-A/D   X=TIME    Y=D:IBEAM ,D:R3HLFB,D:BPMAD2,D:R3LLFR
COMMAND ---- Eng-U  I= 0       I= 0    , 0     ,-90    , 2359920
-<37>+  One+ 15_Hz  F= 240     F=-10   , 1000  ,-50    , 2360240
acc10 acc30 acc50 deb10 deb30 DEB50 protn  inj  dtoa  ext   bostr
-D:MH3Q17     D3Q17 Horizontal Motion   <    >    .043   mm   *..
-D:MH4Q0      D40Q Horizontal Motion    <    >    .44    mm   ...
-D:MH4Q17     D4Q17 Horizontal Motion   <    >   -.081   mm   ...
-D:MH4Q14     D4Q14 Horizontal Motion   <    >   -.161   mm   ...
-D:MH4Q10     D4Q10 Horizontal Motion   <    >   -.105   mm   ...
-D:MH4Q9      D4Q9 Horizontal Motion    <    >   3.243   mm   ...
-D:MHD4Q8     D4Q8 Horizontal Motion    <    >   1.225   mm   ...
-D:H405       D4Q5-H   25A/25V CORR D  -12.8  *-12.8   AMP   ...
-D:H403       D4Q3-H   DEB HOR TRIM     4.487 * 4.537  AMP   ...

-D:H501       D5Q1-H   DEB HOR TRIM    -1.012 *-1.151  AMP   ...
-D:MH5Q3      D5Q3 Horizontal Motion    <    >  -2.164  mm   ...
-D:MH5Q4      D5Q4 Horizontal Motion    <    >  -3.584  mm   ...
-D:MH5Q6      D5Q6 Horizontal Motion    <    >   2.022  mm   ...
-D:MH5Q9      D5Q9 Horizontal Motion    <    >    .074  mm   ...
-D:MH5Q12     D5Q12 Horizontal Motion   <    >    .18   mm   ...

-D:MH5Q17     D5Q17 Horizontal Motion   <    >    .155  mm   ...
-D:MH6Q0      D60Q Horizontal Motio     <    >   1.426  mm   *..
-D:MH6Q17     D6Q17 Horizontal Motion   <    >    .75   mm   *..
 ! HORIZONTAL CORRECTOR ABOVE

 ! VERTICAL CORRECTORS BELOW
-D:MV3Q17     D3Q17 Vertical Motion     <    >   2.102  mm   *..
-D:MV4Q0      D40Q Vertical Motion      <    >   -.36   mm   ...
-D:MV4Q17     D4Q17 Vertical Motion     <    >    .893  mm   ...
-D:MV4Q14     D4Q14 Vertical Motion     <    >   1.029  mm   ...
-D:MV4Q10     D4Q10 Vertical Motion     <    >  -2.189  mm   ...
-D:MV4Q9      D4Q9 Vertical Motion      <    >    .291  mm   ...
-D:MVD4Q8     D4Q8 Vertical Motion      <    >   6.401  mm   ...
-D:V406       D4Q6-V   25A/25V CORR D   -2.85 *-2.938  AMP   ...
-D:V403       D4Q3-V   DEB VERT TRIM    16.49 * 16.39  AMP   ...
-D:V401       D50Q-V   25A/25V CORR D  -10.95 *-11.08  AMP   ...

-D:MV5Q3      D5Q3 Vertical Motion      <    >  -3.156  mm   ...
-D:MV5Q4      D5Q4 Vertical Motion      <    >  -1.755  mm   ...
-D:MV5Q6      D5Q6 Vertical Motion      <    >   -.812  mm   ...
-D:MV5Q9      D5Q9 Vertical Motion      <    >   -.422  mm   ...
-D:MV5Q12     D5Q12 Vertical Motion     <    >   -.05   mm   ...

-D:MV5Q17     D5Q17 Vertical Motion     <    >   1.439  mm   ...
-D:MV6Q0      D60Q Vertical Motion      <    >   5.221  mm   *..
-D:MV6Q17     D6Q17 Vertical Motion     <    >   1.482  mm   *..
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- D:DPENI: Issue and "Off," then issue a "+." WE only need to do this once.
- P60 DEB50 <9>

- **P60 DEB50 <9>**

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┌─────────────── Linux PA P60 POWER SUPPLY PARAM<NoSets> ───────────────┐
│ P60  MOTORIZED DEVICES              SET    D/A   A/D  Com-U  ◆PTools◆ │
│ -<FTP>+ *SA◆ X-A/D  X=TIME     Y=D:IBEAM ,D:R3HLFB,D:BPMAD2,D:R3LLFR   │
│ COMMAND ---- Eng-U  I= 0        I= 0     , 0      ,-90    , 2359920    │
│ -< 9>+  One+ 15_Hz  F= 240      F=-10    , 1000   ,-50    , 2360240    │
│ acc10 acc30 acc50 deb10 deb30 DEB50 protn  inj  dtoa  ext   bostr     │
│                                                                        │
│ -D:MHD4Q8     D4Q8 Horizontal Motion    <    >    1.213   mm   ...     │
│ -D:MVD4Q8     D4Q8 Vertical Motion      <    >    6.401   mm   ...     │
│                                                                        │
│ -D:MVISEP     D:ISEP ds Vert Motion     <    >   26.62    mm   .TL     │
│                                                                        │
│ -A:MS5H1U     4-8 MOM PU STAND H US     <    >   -1.548   mm   ...     │
│ -A:MS5V1U     4-8 MOM PU STAND V US     <    >    1.218   mm   ...     │
│ -A:MS5H1D     4-8 MOM PU STAND H DS     <    >    -.405   mm   ...     │
│ -A:MS5V1D     4-8 MOM PU STAND V DS     <    >    1.218   mm   ...     │
│                                                                        │
│ -A:CMTH01     4-8 Core Mom Tbone 125ps  <    >   43.85    ps   ...     │
│ -A:CMTH02     4-8 Core Mom Trombone     <    >   54.32    ps   ...     │
│                                                                        │
│  D:594MCD     Cr $59-4 Motor Direction           0       N/A          │
│                                                                        │
│ -D:MH4Q9      D4Q9 Horizontal Motion    <    >    3.243   mm   ...     │
│ -D:MV4Q9      D4Q9 Vertical Motion      <    >     .285   mm   ...     │
│                                                                        │
│ -D:MH4Q10     D4Q10 Horizontal Motion   <    >    -.105   mm   ...     │
│ -D:MV4Q10     D4Q10 Vertical Motion     <    >   -2.189   mm   ...     │
│                                                                        │
│ -D:MH5Q3      D5Q3 Horizontal Motion    <    >   -2.164   mm   ...     │
│ -D:MV5Q3      D5Q3 Vertical Motion      <    >   -3.163   mm   ...     │
│                                                                        │
│ -D:MH5Q4      D5Q4 Horizontal Motion    <    >   -3.584   mm   ...     │
│ -D:MV5Q4      D5Q4 Vertical Motion      <    >   -1.761   mm   ...     │
│                                                                        │
│ -D:MH4Q14     D4Q14 Horizontal Motion   <    >    -.161   mm   ...     │
│ -D:MV4Q14     D4Q14 Vertical Motion     <    >    1.029   mm   ...     │
│                                                                        │
│ -D:MH4Q17     D4Q17 Horizontal Motion   <    >    -.081   mm   ...     │
│ -D:MV4Q17     D4Q17 Vertical Motion     <    >     .893   mm   ...     │
│ -D:MV5Q17     D5Q17 Vertical Motion     <    >    1.439   mm   ...     │
│ -D:MH4QO      D40Q Horizontal Motion    <    >     .44    mm   ...     │
│ -D:MV4QO      D40Q Vertical Motion      <    >     -.36   mm   ...     │
│ -D:MH5Q6      D5Q6 Horizontal Motion    <    >    2.022   mm   ...     │
│ -D:MV5Q6      D5Q6 Vertical Motion      <    >    -.819   mm   ...     │
│ -D:MH5Q9      D5Q9 Horizontal Motion    <    >     .074   mm   ...     │
│ -D:MV5Q9      D5Q9 Vertical Motion      <    >    -.422   mm   ...     │
│ -D:MH5Q12     D5Q12 Horizontal Motion   <    >     .18    mm   ...     │
│ -D:MV5Q12     D5Q12 Vertical Motion     <    >     -.05   mm   ...     │
│ -D:MH5Q17     D5Q17 Horizontal Motion   <    >     .155   mm   ...     │
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- **D:DPVATT 63.75 dB -> 3.75dB -> 63.75dB.**
  - Accept and recalculate
  - Run
  - File -> Save As
    - C:\Paint Aperture
  - Computer icon
  - Move slide bar around we can see where beam is lost.   The bottom of the slop is where to look.   Look for bumps in this area.

- P169
  - Find a bump for the location that the Paint the Aperture application points to as a point of loss.
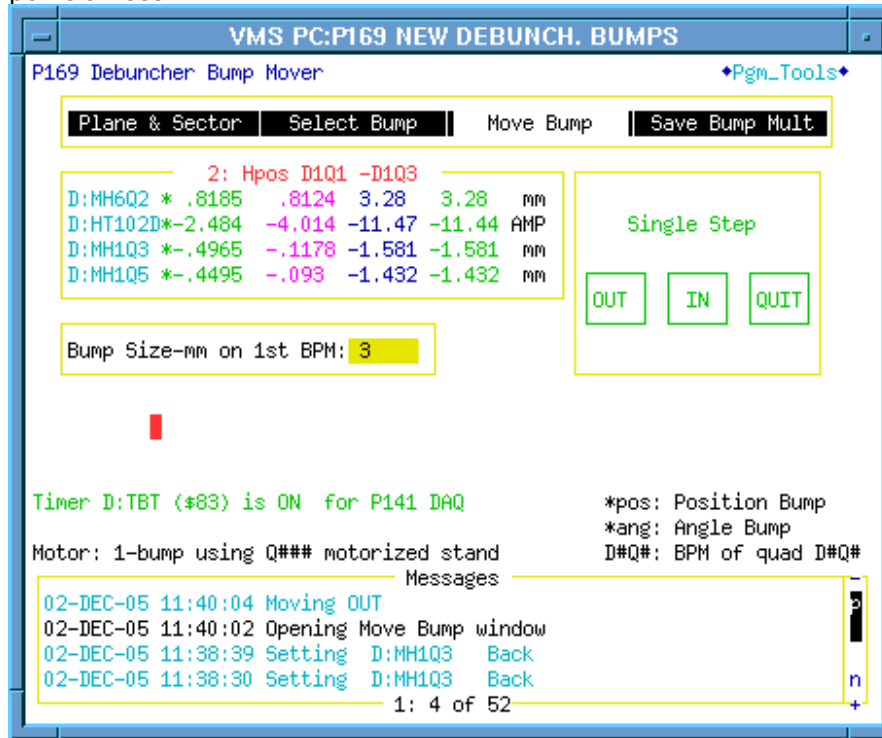
- Plot loss monitors while moving bump.   Moving too far in either direction will create losses. The idea is to move the bump in such a way to maximize the lossless region of plot.
- Complete a Debuncher Admittance measurement to check progress.

• Start the Java Pbar Component Centering Application.   We will now center Debuncher devices in the region of the bump that we just made.
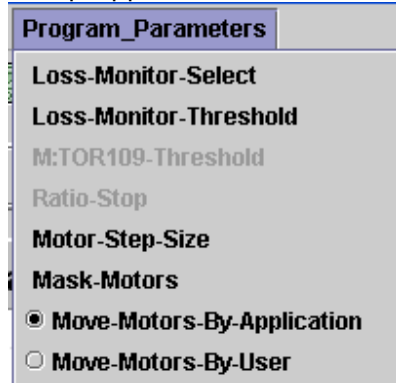

- Choose device to bump around in pull-down menu on top-left.

Choose device to bump around in pull-down menu on top-left.
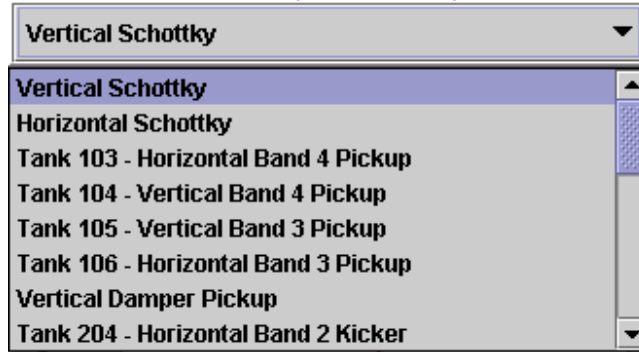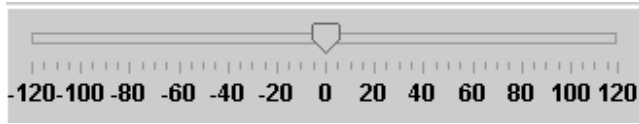

- Setup Application

-
  - Program Parameters -> Loss Monitor Select (Use Pbar map to help choose loss monitors).   We only select two loss monitors.
  - Program Parameters -> Loss Monitor Threshold.   Used 200.   This is the loss value were we stop moving the debuncher device.
  - Program Parameters -> Motor Step Size: Two different kinds of stands.   We were using 0.2mm and 1500 steps. Smaller step size takes longer, but yields more detail.
  - Program Paramters -> Mask Motors: Deselect any scans that you are not going to complete.
- RUN
- When losses exceed threshold, use slider bar to mark the loss touch point and click "Accept"
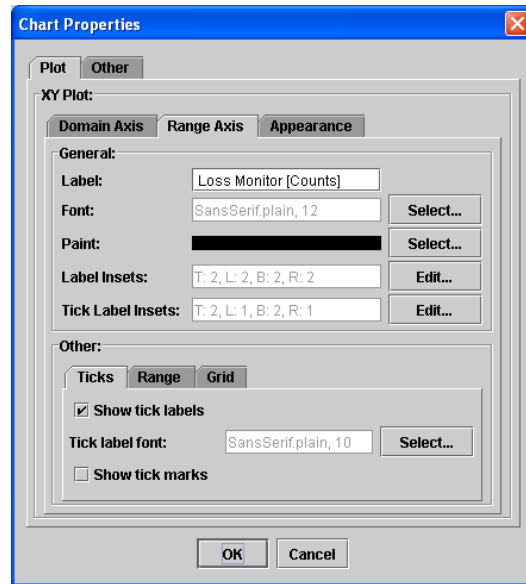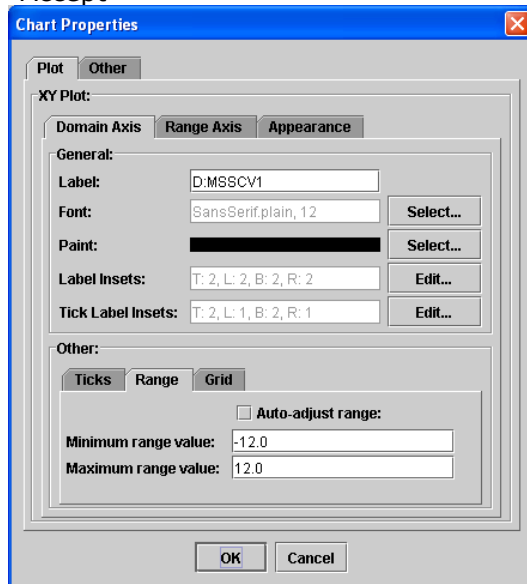
-
- Adjust plot scale if necessary by right-clicking on the plot and selecting "Properties"
- When scan completed in other direction, again use slider bar to show the touch point.

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    - Click Accept and the application will move the movable device to the center point between the two touch points that you selected.
- Repeat for all devices in area.
- Repeat Debuncher admittance measurement to verify that you did not hurt the aperture.